> The claim is narrative in form and replete with indefinite and functional or operative language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a completely operative device. Claim 23 is an independent claim in which the system for controlling the vehicle is undefined.

Claim 23 has been amended to depend from Claim 17. With this amendment the claim is believed to be in condition for allowance.

Claim Rejections - 35 USC §102

In the Office Action the Examiner rejected 1-5 and 17 under 35 USC § 102(e) as being anticipated by FLICK (USPN 6480117). The grounds for the rejection were that

> Flick teaches a method of controlling the operation of a vehicle with a radio communications circuit configured to communicate with a vehicle operator's handheld radio frequency transponder ... .

The Applicants respectfully traverse the Examiner's rejection of the claims.

FLICK describes a simple traditional car alarm/disablement system. In the FLICK system, a single vehicle controller 11 with a single microprocessor 12 is connected via relays directly to switches, sensors and actuators around the vehicle to disable operation of the vehicle's engine. See FIGURE 1.

FLICK teaches a simple car alarm system that bypasses the vehicle's control of the engine by connecting directly to the various electrical devices such as an electrical ignition system, an electrical starting system, and an electrical fuel pump. FLICK teaches this arrangement for obvious reasons: a system that bypasses the vehicle's standard control of the various engine control systems and controls the starter, doors, ignition and fuel pump directly can be successfully sold and retrofitted to a variety of vehicles as a universal aftermarket security product.

Claim1 has been amended to recite a method of controlling the operation of a vehicle having three microprocessor-based controllers coupled together by a serial communications bus. Claim 1 has also been amended to recite that the method of controlling the vehicle is indirect, by having one controller signal another controller over the serial bus to responsively disable a vehicle system such as the vehicle's engine or the vehicle's hydraulic actuators.

Nothing in FLICK teaches a multiple controller vehicle system. Nothing in FLICK teaches indirect vehicle control having one controller signal other controllers to disable vehicle systems. To the contrary, FLICK teaches direct control of the vehicle systems by disabling particular devices such as the fuel pump, ignition, and starter. See FIGURE 1 of FLICK which illustrates the direct control.

Claim 17 has been amended to recite a system for controlling the operation of a vehicle including a control system that has four microprocessor-based controllers: an engine controller, transmission controller, vehicle hydraulics controller, and controller connected to a transponder reader circuit to communicate with the transponder.

Claim 17 has also been amended to recite that the vehicle is indirectly controlled by transmitting a digital signal from the transponder reader controller to the other controllers over a serial communication bus and have the other controllers do the controlling.

Nothing in FLICK teaches the type or number of controllers on the vehicle beyond a single CPU. Nothing in FLICK teaches indirect vehicle control by that CPU. FLICK teaches direct control of the vehicle by a single CPU that disables particular devices such as the fuel pump, ignition, and starter.

Claim 1, claims 2-5 dependent thereon, and claim 17 are believed to be in condition for allowance.

Claim Rejections - 35 USC §103

In the Office Action the Examiner rejected Claims 6-7 and 8 under 35 USC § 103 as being unpatentable over FLICK in view of Konrad et al. (USPN 6020827, "KONRAD").

The grounds for the rejection were that:

> Flick teaches each transponder is uniquely coded for identification purposes ... but is not explicit in teaching the transmission from the transponder include a value that identifies the operator. Konrad et al. ... teaches a transponder providing user identification ... and compar[ing] the user identification with the previously stored information ... .

Neither FLICK nor KONRAD teach a multiple controller vehicle system. Nothing in FLICK and KONRAD teach indirect vehicle control having one controller signal other controllers to disable vehicle systems. To the contrary, FLICK teaches direct control of the vehicle systems by disabling particular devices such as the fuel pump, ignition, and

starter. See FIGURE 1 of FLICK which illustrates the direct control.

For at least these reasons, the Applicants respectfully request that the Examiner withdraw his rejection of Claims 6-8 as dependent upon Claim 1 which is allowable.

In the Office Action the Examiner rejected Claims 9-11 and 13-14 under 35 USC § 103 as being unpatentable over Giessl (USPN 6538557, "GIESSL") in view of FLICK.

The grounds for the rejection were that:

> Giessl teaches a method of controlling the operation of a vehicle in response to data received from a radio transponder ... . Giessl is silent on teaching generating by the vehicle of an electromagnetic field sufficient to energize the transponder. Flick ... teaches energizing a transponder by the electromagnetic radiation ... .

The Applicants respectfully traverse the Examiner's rejection of the claims.

Claim 9 includes the steps of comparing in a microprocessor-based controller data received from a transponder and data previously stored in the vehicle, and limiting the functionality of the vehicle based upon that comparison by transmitting a signal to another controller over a serial communications bus to a second controller that responsively limits the functionality of the vehicle.

Neither GIESSL nor FLICK teaches a multiple microprocessor-based controller vehicle, or transmission from one controller to another of comparison results to limit the vehicle's functionality as provided in Claim 9.

Claims 10-11, 13 and 14 are dependent upon an otherwise allowable base claim, Claim 9, and are therefore also allowable.

For at least the above reasons the Applicants respectfully request that the Examiner withdraw his rejection of Claims 9-11, 13, and 14.

In the Office Action the Examiner rejected Claim 12 under 35 USC § 103 as being unpatentable over GIESSL in view of FLICK and further in view of Rick et al. (USPN 6552648, "RICK").

The grounds for the rejection were that:

> Giessl in view of Flick teaches downloading operational parameters to the vehicle but is silent on teaching [] the operational parameter includes a geographical area. Rick et al. ... teaches the operational parameter includes a geographical area in which a vehicle must be driven ... .

The Applicants respectfully traverse the Examiner's rejection of claim 12.

RICK does not teach downloading geographical data from a transponder located in close proximity to the operator station to the vehicle. This transponder in close proximity is the source of the geographical data recited in Claim 12.

In contrast to this, RICK solves the problem of unauthorized use outside a geographical area by having a remote "master station broadcast a signal defining use restriction applicable to the vehicle in question." Transmissions to and from the remote master station are so far away that they are relayed to the vehicle using a cellular phone communicating with the "Digital European Cordless Telephone" network. Any operation of the vehicle is not possible until the remote master station transmits the use restrictions (which include geographic use restrictions) to the vehicle. As RICK explains in several places, remote control by a master station permits a vehicle to be de-authorized and shut down remotely by stopping the master station from sending its periodic re-authorization signals. When RICK's vehicle ceases to receive these signals every couple hours or so RICK's vehicle stops operating.

RICK teaches against the system envisioned by the Applicants in which the geographic information system is downloaded from a transponder in close proximity to the operator's station of the vehicle. RICK could not achieve the various benefits of remote operation and shut down with such a system. As RICK notes, transmission and control from his faraway transmitter, his remote "master station" is preferred for security and usability reasons, since

> "A ***disadvantage*** of [a prior art system] is that the limitation of the ***area of movement has to be defined in advance, and cannot readily be changed during the period of use***. In addition, it is disadvantageous that measures are only taken for the possibility of the vehicle leaving a specific geographical area which may not be adequate for specific applications. Furthermore, ***no measures are provided to address the possibility that the receiver may be tampered with or destroyed***. (See RICK, cols 1-2).

For at least the above reasons the Applicants respectfully request that the Examiner

withdraw his rejection of Claim12.

In the Office Action the Examiner rejected Claims 15-16 under 35 USC § 103 as being unpatentable over GIESSL in view of FLICK and further in view of Doyle (USPN 5815071, "DOYLE").

The grounds for the rejection were that:

> Giessl in view of Flick teaches downloading operational parameters to the vehicle but is silent on teaching [] the operational parameters includes the maximum engine load and the speed of the vehicle. ... Doyle ... teaches the operational parameter includes the speed of operation of the vehicle and load the engine load (by controlling the engine RPM) ... .

Claims 15 and 16 have been rewritten in independent form. The Applicants respectfully traverse the Examiner's rejection of Claims 15-16.

DOYLE teaches using a satellite communication network to set vehicle operational parameters. There are several reasons recited in DOYLE for this. First, to avoid having to visit each and every vehicle in a fleet. Second, to avoid having to bring every vehicle in a fleet to a common location for changing. Third, to prevent the operator (a person in proximity to the operator's station) from setting the operational parameters wrongly. See DOYLE, col.1, lines 34-41.

First, DOYLE cannot be properly combined with GIESSL or FLICK. DOYLE teaches remote control of parameters over a satellite network. GIESSL and FLICK teach local control of the vehicle by a hand-held device operator-carried device that is taken to each and every vehicle. All the advantages of DOYLE would be lost by requiring that vehicle operational parameters be stored in the GIESSL and FLICK hand-held device and carried to the vehicle.

Second since DOYLE teaches transmitting data from a satellite to a vehicle to avoid having to visit every vehicle, DOYLE does not teach or suggest a system that requires data downloaded from a transponder brought in "close proximity to an operator's station" as recited by the claim.

Requiring data sent from transponders in close proximity would require traveling to each vehicle in the fleet to change all the fleet vehicles, yet this travel to every vehicle is precisely what DOYLE's satellite system teaches against.

For at least these reasons, the Applicants respectfully request that the Examiner

withdraw his rejection of Claims 15-16.

In the Office Action the Examiner rejected Claims 18-20 under 35 USC § 103 as being unpatentable over FLICK in view of DOYLE.

The grounds for the rejection were that:

> Flick teaches transmitting data from the transponder to control the operation of the vehicle ... . Doyle teaches the operational parameter includes the speed of operation of the vehicle and load the operation.

Claims 18, 19, and 20 have been amended to place them in independent form. The applications respectfully traverse the Examiner's rejection of Claims 18-20.

DOYLE teaches using a satellite communication network to set vehicle operational parameters. There are several reasons recited in DOYLE for this. First, to avoid having to visit each and every vehicle in a fleet. Second, to avoid having to bring every vehicle in a fleet to a common location for changing. Third, to prevent the operator from setting the operational parameters wrongly. See the detailed discussion in columns 1 and 2 of DOYLE.

First, DOYLE cannot be properly combined with FLICK since DOYLE and FLICK teach against each other. DOYLE teaches remote control of parameters for an entire fleet of vehicles from a central facility using a satellite network. In contrast to this, FLICK teaches local control of the vehicle by a hand-held operator-carried device that is taken to each and every vehicle. All the advantages of DOYLE would be lost by requiring that vehicle operational parameters be stored in a FLICK hand-held device and carried to each vehicle in the DOYLE fleet.

Second, DOYLE does not teach configuring the vehicle as provided in claims 18-20 based on data received from a transponder, but from data received from a satellite. Data received from a transponder would require a visit to each and every vehicle in a DOYLE fleet. DOYLE specifically teaches against these vehicle-to-vehicle visits.

For at least these reasons, the Applicants respectfully request that the Examiner withdraw his rejection of Claims 18-20.

In the Office Action the Examiner rejected Claims 21 and 23 under 35 USC § 103 as being unpatentable over FLICK in view of GIESSL.

The grounds for the rejection were that:

> Flick teaches transmitting data from the transponder to control the operation of the vehicle ... . Giessl [teaches] securing a vehicle against unauthorized use by controlling the operation of a vehicle in response to data received from a radio transponder ... and disable the vehicle after a predetermined amount of time of operation ... .

The Applicants respectfully traverse the Examiner's rejection of Claims 21 and 23.

Neither FLICK nor GIESSL teach or suggests the multiple microprocessor-based controller system with inter-controller serial bus communications recited by Claim 17, from which claims 21 and 23 depend.

For at least this reason, the Applicants respectfully request that the Examiner withdraw his rejection of Claims 21 and 23.

In the Office Action the Examiner rejected Claim 22 under 35 USC § 103 as being unpatentable over FLICK in view of RICK.

The grounds for the rejection were that:

> Flick teaches transmitting data from the transponder to control the operation of the vehicle ... . Rick teaches a vehicle control unit configured to disable the vehicle of it travels outside a predetermined area ... . .

The Applicants respectfully traverse the Examiner's rejection of Claim 22.

First, RICK does not teach a vehicle with a control system that inputs data from a transponder reader circuit that controls operation of the vehicle in response to this data shutting down the vehicle if it travels outside the predetermined geographical area of operation.

In contrast to this, RICK solves the problem of unauthorized use outside a geographical area by having a remote "master station broadcast a signal defining use restriction applicable to the vehicle in question." Transmissions to and from the remote master station are so far away that they are relayed to the vehicle using a cellular phone communicating with the "Digital European Cordless Telephone" network. Any operation of the vehicle is not possible until the remote master station transmits the use restrictions (which include geographic use restrictions) to the vehicle. As RICK explains in several places, remote control by a master station permits a vehicle to be

de-authorized and shut down remotely by stopping the master station from sending its periodic re-authorization signals. When RICK's vehicle ceases to receive these signals every couple hours or so RICK's vehicle stops operating.

RICK teaches against the system envisioned by the Applicants in which the control system receives transponder data and disables the vehicle if the vehicle travels outside a geographical area.

RICK could not achieve the various benefits of remote operation and shut down with such a system. As RICK notes, transmission and control from his faraway transmitter, his remote "master station" is preferred for security and usability reasons, since

> "A ***disadvantage*** of [a prior art system] is that the limitation of the ***area of movement has to be defined in advance, and cannot readily be changed during the period of use***. In addition, it is disadvantageous that measures are only taken for the possibility of the vehicle leaving a specific geographical area which may not be adequate for specific applications. Furthermore, ***no measures are provided to address the possibility that the receiver may be tampered with or destroyed***. (See RICK, cols 1-2).

Second, neither RICK nor FLICK teach or suggest the multiple microprocessor-based controller system with inter-controller serial communication recited in claim 17.

For at least these reasons, the Applicants respectfully request that the Examiner withdraw his rejection of Claim 22.

Conclusion

The Applicants believe that all the claims are allowable over the cited art and ask for early reconsideration.

If the undersigned attorney for the Applicants can be of any assistance, the Examiner is encouraged to contact him.

Respectfully submitted,

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Current Listing of All Claims

1. (currently amended) A method of controlling the operation of a vehicle with a radio communications circuit coupled to a first microprocessor-based controller, the circuit being configured to communicate with a vehicle operator's handheld radio frequency transponder, said vehicle further including a second microprocessor-based controller configured to control a plurality of hydraulic actuators, a third microprocessor-based controller configured to control a vehicle engine, and further wherein said first, second and third controllers are coupled together by a serial communications bus, the method comprising the steps of:

a. providing the vehicle having the bi-directional radio communications circuit;

b. providing the radio transponder to the vehicle operator;

c. generating electromagnetic radiation from the radio communications circuit;

d. bringing the transponder within the range of the electromagnetic radiation;

e. energizing the transponder by the electromagnetic radiation;

f. transmitting first information from the transponder after the step of energizing the transponder;

~~f.~~g. receiving at the reader circuit the first information transmitted by the transponder; and

~~g~~h. controlling at least one subsystem of the vehicle in response to the first information received at the transponder including the steps of:

(1) said first controller signaling said second or third controller over said serial communication bus, and

(2) said second controller responsively disabling said hydraulic actuators or said third controller responsively disabling said engine.

2. (original) The method of Claim 1, wherein the step of providing the radio transponder includes the step of providing the radio transponder with a low-power microcontroller configured to receive its operating power from the electromagnetic radiation.

3. (original) The method of Claim 2, wherein the step of providing the radio transponder includes the step of molding the radio transponder into a vehicle ignition key

4. (original) The method of Claim 2, wherein the step of providing a radio transponder includes the step of embedding the radio transponder in a hand-held card.

5. (original) The method of Claim 4, wherein the step of providing a radio transponder includes the step of mechanically bonding the radio transponder to a vehicle ignition key.

6. (original) The method of Claim 1, wherein the step of transmitting the first information includes the step of transmitting a digital value that identifies the operator.

7. The method of Claim 6, wherein the step of controlling at least one subsystem includes the step of comparing the digital value that identifies the operator with a value previously stored in the vehicle's controller.

8. (original) The method of Claim 7, wherein the step of controlling at least one subsystem of the vehicle includes the step of disabling the operation of one or more of the following subsystems:

a. a fuel pump of the vehicle;

b. a hydraulic system of the vehicle;

c. a starting system of the vehicle;

d. an electrical system of the vehicle;

e. a transmission of the vehicle; and

f. an engine of the vehicle.

9. (currently amended) A method of controlling the operation of a vehicle in response to data received from a radio transponder, the vehicle having a short-range radio transceiver configured to selectively energize the transponder when it is in close proximity to an operator's station of the vehicle, the method including the steps of:

a. storing data in the transponder indicative of the operator;

b. bringing the transponder into close proximity of the operator's station of the vehicle;

c. generating by the vehicle of an electromagnetic field sufficient to energize the transponder;

d. downloading from the transponder to the vehicle the data indicative of the operator;

e. comparing by a first microprocessor-based controller in the vehicle of the downloaded data indicative of the operator with data previously stored in the vehicle; and

f. limiting the functionality of the vehicle based upon the step of comparing, including the steps of

(1) signaling said limited functionality to at least one of a microprocessor-based engine controller and a microprocessor-based auxiliary controller over a serial communication bus from said first microprocessor-based controller; and

(2) responsively limiting the functionality of the vehicle by said at least one controller based upon said signalled limited functionality.

10. (original) The method of Claim 9, wherein the data indicative of the operator includes data indicative of the vehicle operational parameters.

11. (original) The method of Claim 10, wherein the operational parameters include a distance traveled.

12. (currently amended) ~~The method of Claim 10,~~ A method of controlling the operation of a vehicle in response to data received from a radio transponder, the vehicle having a short-range radio transceiver configured to selectively energize the transponder when it is in close proximity to an operator's station of the vehicle, the method including the steps of:

a. storing data in the transponder indicative of the operator;

b. bringing the transponder into close proximity of the operator's station of the vehicle;

c. generating by the vehicle of an electromagnetic field sufficient to energize the transponder;

d. downloading from the transponder to the vehicle the data indicative of the operator;

e. comparing by the vehicle of the downloaded data indicative of the operator with data previously stored in the vehicle; and

f. limiting the functionality of the vehicle based upon the step of comparing,

wherein the data indicative of the operator includes data indicative of the vehicle operational parameters, and further wherein the operational parameters include a geographical area in which the vehicle may be driven.

13. (original) The method of Claim 10, wherein the operational parameters includes times of the day during which operation is permitted.

14. (original) The method of Claim 10, wherein the operational parameters include an elapsed time of operation.

15. (currently amended) ~~The method of Claim 10,~~ A method of controlling the operation of a vehicle in response to data received from a radio transponder, the vehicle having a short-range radio transceiver configured to selectively energize the transponder when it is in close proximity to an operator's station of the vehicle, the method including the steps of:

a. storing data in the transponder indicative of the operator;

b. bringing the transponder into close proximity of the operator's station of the vehicle;

c. generating by the vehicle of an electromagnetic field sufficient to energize the transponder;

d. downloading from the transponder to the vehicle the data indicative of the operator;

e. comparing by the vehicle of the downloaded data indicative of the operator with data previously stored in the vehicle; and

f. limiting the functionality of the vehicle based upon the step of comparing,

wherein the data indicative of the operator includes data indicative of the vehicle operational parameters, and further wherein the operational parameters include a maximum engine load.

16. (currently amended) ~~The method of Claim 10~~ A method of controlling the operation of a vehicle in response to data received from a radio transponder, the vehicle having a short-range radio transceiver configured to selectively energize the transponder when it is in close proximity to an operator's station of the vehicle, the method including the steps of:

a. storing data in the transponder indicative of the operator;

b. bringing the transponder into close proximity of the operator's station of the vehicle;

c. generating by the vehicle of an electromagnetic field sufficient to energize the transponder;

d. downloading from the transponder to the vehicle the data indicative of the operator;

e. comparing by the vehicle of the downloaded data indicative of the operator with data previously stored in the vehicle; and

f. limiting the functionality of the vehicle based upon the step of comparing,

wherein the data indicative of the operator includes data indicative of the vehicle operational parameters, and further, wherein the operational parameters include a maximum speed of the vehicle.

17. (currently amended) A system for controlling the operation of a vehicle, comprising:

a. a portable radio transponder including a microcontroller and an digital memory, wherein the digital memory includes data indicative of an operator of a vehicle;

b. a vehicle further comprising:

i. a transponder reader circuit configured to transmit electromagnetic radiation sufficient to energize and enable the transponder to transmit the data at a transponder radio frequency; and

ii. a control system configured to input the data from the transponder reader circuit and to control operation of the vehicle in response to the data, said control system comprising a first microprocessor-based controller coupled to said reader circuit, a second microprocessor-based controller configured to control a vehicle engine; a third microprocessor-based controller configured to control a

vehicle transmission, and a fourth microprocessor-based controller configured to control vehicle hydraulic actuators, said control system further comprising a serial communication bus coupling said first, second, third and fourth controllers, wherein said first controller is configured to generate control signals and transmit those control signals over said serial bus to said second, third or fourth controllers based upon said data received from the transponder, and further wherein said second, third or fourth controllers are configured to responsively control said vehicle engine, vehicle transmission or said vehicle hydraulic actuators.

18. (currently amended) ~~The system for controlling the operation of a vehicle of Claim 17~~ A system for controlling the operation of a vehicle, comprising:

a. a portable radio transponder including a microcontroller and an digital memory, wherein the digital memory includes data indicative of an operator of a vehicle;

b. a vehicle further comprising:

i. a transponder reader circuit configured to transmit electromagnetic radiation sufficient to energize and enable the transponder to transmit the data at a transponder radio frequency; and

ii. a control system configured to input the data from the transponder reader circuit and to control operation of the vehicle in response to the data,

wherein the control system is configured to set a vehicle speed limit based upon the data received from the transponder.

19. (currently amended) A system for controlling the operation of a vehicle, comprising:

a. a portable radio transponder including a microcontroller and an digital memory, wherein the digital memory includes data indicative of an operator of a vehicle;

b. a vehicle further comprising:

i. a transponder reader circuit configured to transmit electromagnetic radiation sufficient to energize and enable the transponder to transmit the data at a transponder radio frequency; and

ii. a control system configured to input the data from the transponder reader circuit and to control operation of the vehicle in response to the data~~The system for controlling the operation of a vehicle of Claim 17~~,

wherein the control system is configured to set a maximum engine RPM based upon the data received from the transponder.

20. (currently amended) A system for controlling the operation of a vehicle, comprising:

a. a portable radio transponder including a microcontroller and an digital memory, wherein the digital memory includes data indicative of an operator of a vehicle;

b. a vehicle further comprising:

i. a transponder reader circuit configured to transmit electromagnetic radiation sufficient to energize and enable the transponder to transmit the data at a transponder radio frequency; and

ii. a control system configured to input the data from the transponder reader circuit and to control operation of the vehicle in response to the data~~The system for controlling the operation of a vehicle of Claim 17~~,

wherein the control system is configured to set a maximum engine load based upon the data received from the transponder.

21. (original) The system for controlling the operation of a vehicle of Claim 17, wherein the control system is configured to disable the vehicle after a predetermined amount of time of operation based upon the data received from the transponder.

22. (original) The system for controlling the operation of a vehicle of Claim 17, wherein the control system is configured to disable the vehicle if it travels outside a predetermined geographical area of operation.

23. (currently amended) The system for controlling the operation of a vehicle of Claim 17, wherein the control system is configured to prevent the operation of the vehicle outside of predetermined time intervals each day based upon the data received from the transponder.